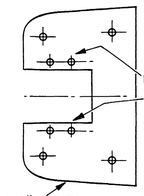
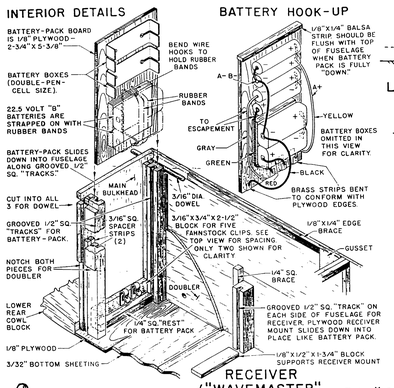
The "SPIRIT"

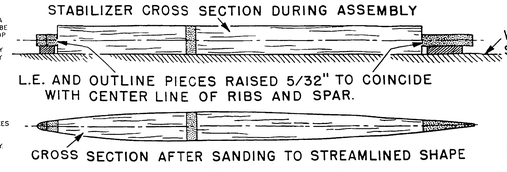
DESIGNED BY — — — JERRY STOLOFF
KIT ENGINEERED BY — ART HASSELBACH
PLANS BY — PAUL PLECAN

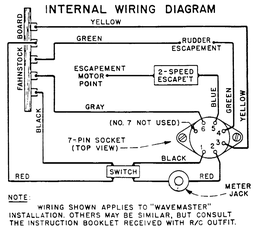
CONSOLIDATED
MODEL ENGINEERING CO. 3857 3rd Avenue, New York, N.Y.

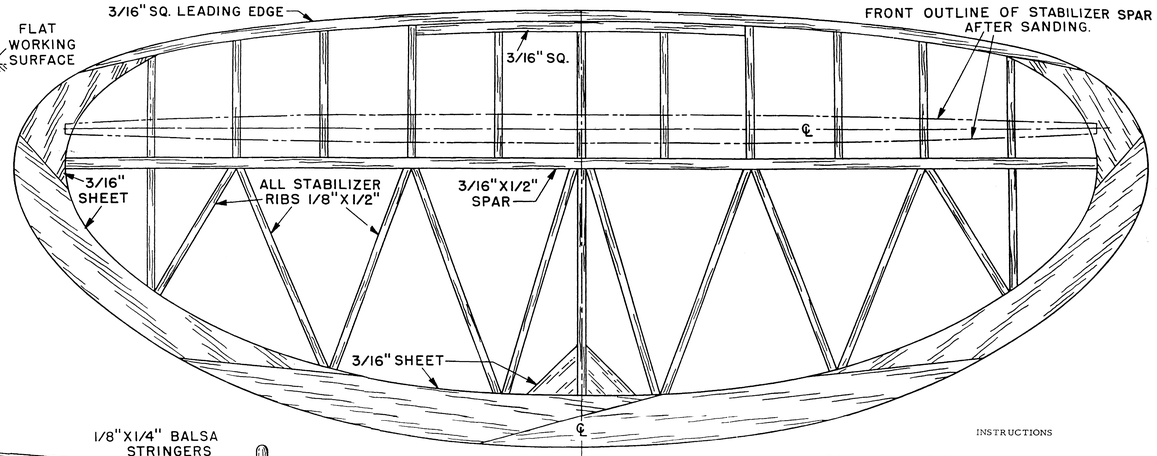


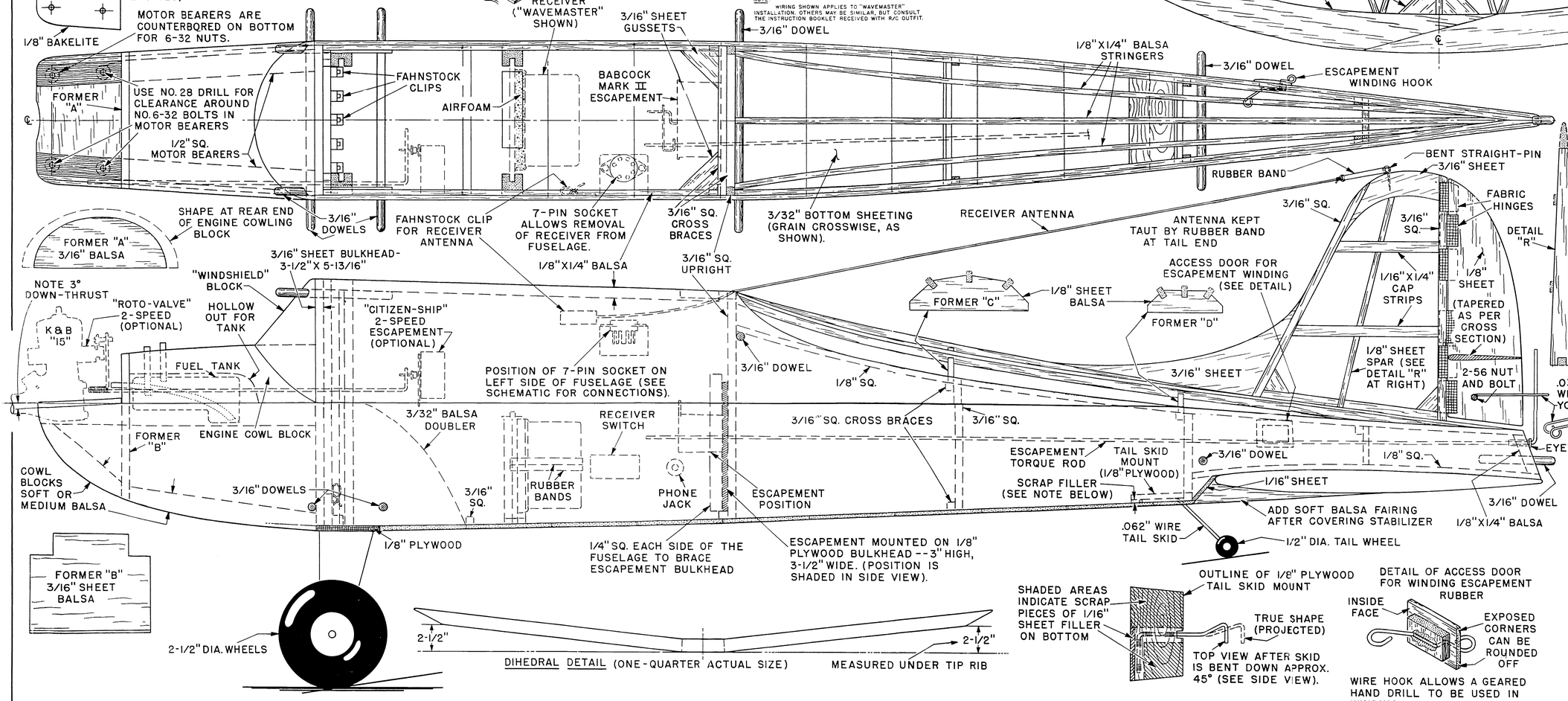

INTERIOR DETAILS
BATTERY-PACK BOARD IS 1/8" PLYWOOD — 2-3/4" X 5-3/8"
BATTERY BOXES (DOUBLE-PENCELL SIZE).
22.5 VOLT "B" BATTERIES ARE STRAPPED ON WITH RUBBER BANDS
BATTERY-PACK SLIDES DOWN INTO FUSELAGE ALONG GROOVED 1/2" SQ. "TRACKS."
CUT INTO ALL 3 FOR DOWEL
GROOVED 1/2" SQ. "TRACKS" FOR BATTERY-PACK.
NOTCH BOTH PIECES FOR DOUBLER
LOWER REAR COWL BLOCK
1/8" PLYWOOD
3/32" BOTTOM SHEETING
BEND WIRE HOOKS TO HOLD RUBBER BANDS
RUBBER BANDS
TO ESCAPEMENT
GRAY
GREEN
MAIN BULKHEAD
3/16" DIA. DOWEL
3/16" SQ. SPACER STRIPS (2)
3/16" X 3/4" X 2-1/2" BLOCK FOR FIVE FAHNSTOCK CLIPS. SEE TOP VIEW FOR SPACING. ONLY TWO SHOWN FOR CLARITY
DOUBLER
1/4" SQ. "REST" FOR BATTERY PACK
1/8" X 1/4" EDGE BRACE
GUSSET
1/4" SQ. BRACE
GROOVED 1/2" SQ. "TRACK" ON EACH SIDE OF FUSELAGE FOR RECEIVER. PLYWOOD RECEIVER MOUNT SLIDES DOWN INTO PLACE LIKE BATTERY PACK.
1/8" X 1/2" X 1-3/4" BLOCK SUPPORTS RECEIVER MOUNT

BATTERY HOOK-UP
1/8" X 1/4" BALSA STRIP SHOULD BE FLUSH WITH TOP OF FUSELAGE WHEN BATTERY PACK IS FULLY "DOWN"
A- B+
YELLOW
BATTERY BOXES OMITTED IN THIS VIEW FOR CLARITY.
BLACK
RED
BRASS STRIPS BENT TO CONFORM WITH PLYWOOD EDGES.


STABILIZER CROSS SECTION DURING ASSEMBLY
FLAT WORKING SURFACE
L.E. AND OUTLINE PIECES RAISED 5/32" TO COINCIDE WITH CENTER LINE OF RIBS AND SPAR.
CROSS SECTION AFTER SANDING TO STREAMLINED SHAPE







OUTLINE OF 1/8" PLYWOOD TAIL SKID MOUNT
SHADED AREAS INDICATE SCRAP PIECES OF 1/16" SHEET FILLER ON BOTTOM
TRUE SHAPE (PROJECTED)
TOP VIEW AFTER SKID IS BENT DOWN APPROX. 45° (SEE SIDE VIEW).

DETAIL OF ACCESS DOOR FOR WINDING ESCAPEMENT RUBBER
INSIDE FACE
EXPOSED CORNERS CAN BE ROUNDED OFF
WIRE HOOK ALLOWS A GEARED HAND DRILL TO BE USED IN WINDING UP ESCAPEMENT RUBBER.

INSTRUCTIONS

Before proceeding to build this model, familiarize yourself with the plans and read the instructions thoroughly; also acquaint yourself with the component parts of the kit before starting construction.

Cement upper and lower halves of fuselage sides together. Cement in place the 3/32" doublers (see plan), making certain that they are on the inside of the fuselage sides. Mark off on the inside of the fuselage sides the positions for the 3/16" bulkhead, 3/16" square uprights and the 1/8" square stiffners; also the 1/8" x 1/4" cabin stiffner. Then cement these various parts in place, as marked. Cement the fuselage sides together first at the 3/16" sheet bulkhead (in front of cabin). Notch for doubler--see Interior Detail. Next, the 3/16" square cross braces are cemented at the rear of the cabin. Turn fuselage upside down with the cabin resting on a flat board, making sure that the sides are square to the board. Spring together the fuselage at the extreme rear and cement and pin together until completely dry. Next, the 3/16" cross braces are cut to size from the top of the plan and cemented in their proper positions. Turn fuselage over and cement Formers C and D in their respective places. Cement in place the 1/4" x 1/8" stringers, making sure they fair together at the rear of the fuselage. The 3/16" sheet gussets are cemented at the top rear of cabin. Install tail wheel; then plank the bottom of the fuselage with the 3/32" sheet, making sure the grain goes across the fuselage (see Interior Detail). The 1/2" square motor bearers are cemented to each side of the fuselage, as per drawing. When dry, Former B is glued in place, after springing nose together. Clamp in this position until cement is thoroughly dry. Drill four holes for mounting bakelite plate (see plan). The 1/8" plywood landing gear plate and the bottom cowl blocks are fitted and cemented, as shown. When thoroughly dry, the corners of the cowl blocks can be sanded to a radius. Shape and fit the top cowl block and windshield block to the fuselage nose and cement lightly. After sanding same, remove and hollow out for a fuel tank. Fuel tank is fastened to motor bearers and cowl blocks are then permanently cemented in place.

Note: Former A (3/16" balsa) is used as a guide to shape engine cowl block. Drill feed line holes in Former A to suit tank. Cement in place all the grooved tracks for battery box and receiver. The entire fuselage is sanded. Mark positions of the 3/16" dowel and drill holes. Do not install the dowels at this time. Install the access door for the escapement winding hook (see plan). The rudder is fully explained on the plan. Build the rudder according to drawing. Finish-sand and cement it in place on the fuselage. Assemble the entire stabilizer outline (leading and trailing edge). Raise it according to plan diagrams. Shape the 3/16" x 1/2" spar according to outline on plan; then glue it in place.

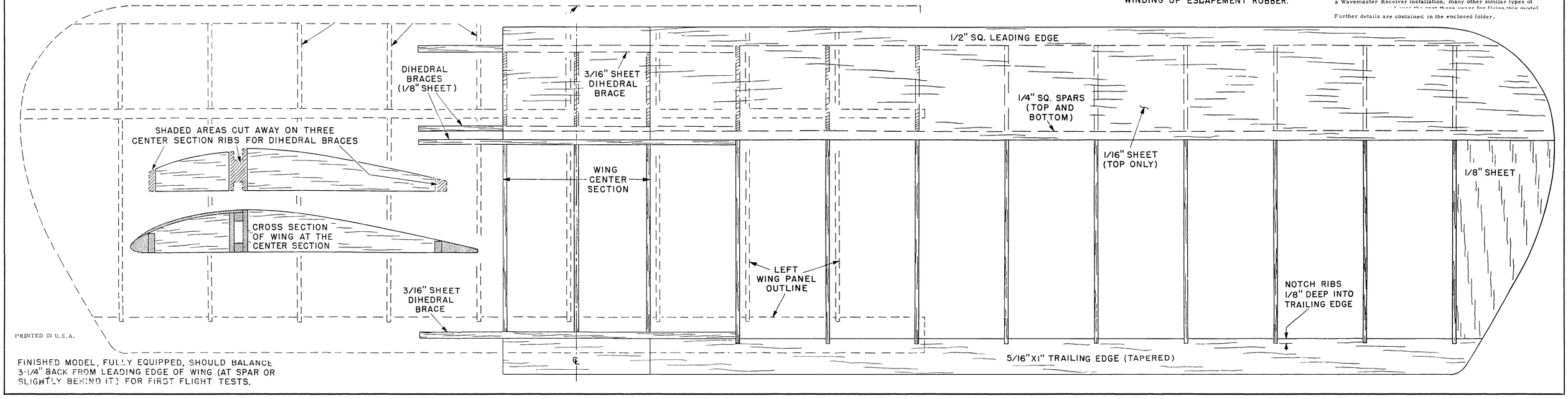
Add the stabilizer ribs 1/8" x 1/2", as shown. After thoroughly dry, shape according to cross-section view on plan (symmetrical). Notch the trailing edges in the wing, as shown on drawing. A right and a left wing panel are made directly on plan. (Do not cover leading edge with 1/16" sheet until after the wing is assembled with the dyhedral and all dyhedral braces are cemented in place.) Then glue in place the 1/16" sheet covering over the leading edge.

Finish-sand entire wing and cover with skysail in kit. Install the block for the five fahnestock clips. Before putting into fuselage, solder lengths of wire according to your wiring diagram. Make sure the brass contacts on Battery Tray line up with fahnestock clips. Use one piece of covering material to cover one side of the fuselage to center stringer of the turtle back and one side of rudder, making sure material fairs into rudder at Former D. Other details, such as dowels, landing gear, tail wheel, rudder, wire yoke and escapement batch are fully explained on drawing, and should be installed accordingly. Landing gear, wing and stab are held in position for flying by several strands of rubber.

Flying Instructions: Model must balance one-third back from the leading edge of wing. If not, shift radio equipment so it does. The model is test glided from a running position with the nose pointed slightly down. The glide should be a long shallow glide, if model is balanced properly. If model has a tendency to stall, a thin shim is placed between the trailing edge of the stabilizer and the fuselage. If model tends to dive, place shim between leading edge of the stabilizer and fuselage. When a satisfactroy glide is attained, power flight can be tried. Using short motor run, hand-launch model for the first flight, watching carefully in which direction model tends to turn with no signal. After familiarizing yourself with the flying characteristics of the Spirit, stunts can then be tried. Adjust thrust left or right so that a straight power flight is obtained. When engine cuts, note which way plane tends to glide with neutral rudder. Adjust torque rod (bend slightly) opposite the rotation of glide so as to have plane glide straight with no signal.

The original Spirit model was painted with Lee's Fuel-Proof Butyrate Dope which we found very satisfactory. For complete finishing instructions read the enclosed folder. Although we show a Wavemaster Receiver installation, many other similar types of

Further details are contained in the enclosed folder.


1/2" SQ. LEADING EDGE
DIHEDRAL BRACES (1/8" SHEET)
3/16" SHEET DIHEDRAL BRACE
1/4" SQ. SPARS (TOP AND BOTTOM)
SHADED AREAS CUT AWAY ON THREE CENTER SECTION RIBS FOR DIHEDRAL BRACES
1/16" SHEET (TOP ONLY)
1/8" SHEET
WING CENTER SECTION
CROSS SECTION OF WING AT THE CENTER SECTION
LEFT WING PANEL OUTLINE
NOTCH RIBS 1/8" DEEP INTO TRAILING EDGE
3/16" SHEET DIHEDRAL BRACE
5/16" X 1" TRAILING EDGE (TAPERED)

PRINTED IN U.S.A.

FINISHED MODEL, FULLY EQUIPPED, SHOULD BALANCE 3-1/4" BACK FROM LEADING EDGE OF WING (AT SPAR OR SLIGHTLY BEHIND IT) FOR FIRST FLIGHT TESTS.